

This is an official

CDC Health Update

Distributed via Health Alert Network

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Inhalation Anthrax Case in Pennsylvania

On February 16, a 44 year-old male presented to a hospital in Pennsylvania with respiratory symptoms including dry cough, shortness of breath and general malaise. Laboratory Response Network (LRN) and Polymerase Chain Reaction (PCR) on 2/21 and gamma phage lysis on 2/22 from blood culture isolate were positive for *Bacillus anthracis*.

Patient resides in New York City and makes drums from unprocessed domestic and imported (Africa) animal hides (cow and goat). Patient reports frequent travel to Africa (most recent travel 12/4/05 – 12/21/05). Patient reports last work with animal hides on 2/15. Process includes cleaning and removal of hair from hides without chemical fixatives. While traveling to Pennsylvania on 2/16, the patient collapsed with rigors and was transported and admitted to a small local hospital.

Patient transferred to a tertiary care center on 2/18. Patient is reported to be stable on antibiotic therapy in the ICU without mechanical ventilation. No signs of cutaneous or pharyngeal anthrax lesions. Preliminary clinical impression suggests anthrax sepsis secondary to inhalation route of exposure due to spores from contaminated animal hides.

Ongoing investigation by PA and NYC departments of health in coordination with law enforcement includes environmental assessment of patient's storage/work facility and home, and identification of individuals who may have had contact with unprocessed hides.

Anthrax causes and transmission

Anthrax is caused by exposure to *B. anthracis* an encapsulated, aerobic, gram-positive, spore-forming, rod-shaped bacterium. Depending on the route of infection, human anthrax can occur in three clinical forms: cutaneous, inhalational, and gastrointestinal. Direct skin contact with contaminated animal products can result in cutaneous anthrax. Inhalation of aerosolized spores, such as through industrial processing of contaminated wool, hair, or hides, can result in inhalational anthrax. Hemorrhagic meningitis can result from hematogenous spread of the organism following any form of the disease.

The incubation period for anthrax is generally <2 weeks. However, due to spore dormancy and slow clearance from the lungs, the incubation period for inhalational anthrax may be prolonged. This phenomenon of delayed onset of disease is not recognized to occur with cutaneous or gastrointestinal exposures.

Skin/cutaneous anthrax

Skin or cutaneous anthrax is the most common type of naturally-acquired infection. Infection begins as a pruritic papule or vesicle that enlarges and erodes (1-2 days) leaving a necrotic ulcer with subsequent formation of a central black eschar (Images at

<http://www.bt.cdc.gov/Agent/cutaneous.asp>.) The lesion is usually painless with surrounding edema, hyperemia, and regional lymphadenopathy. Patients may have associated fever, malaise and headache. Historically, the case-fatality rate for cutaneous anthrax has been <1% with antibiotic treatment and 20% without antibiotic treatment. There are rare case reports of person-to-person transmission of cutaneous disease.

See <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5042a1.htm#tab2> for specific treatment of cutaneous anthrax.

Inhalational anthrax

Inhalational anthrax is rare but is the most lethal form of the disease. Disease may initially involve a prodrome of fever, chills, nonproductive cough, chest pain, headache, myalgias, and malaise. However, more distinctive clinical hallmarks include hemorrhagic mediastinal lymphadenitis, hemorrhagic pleural effusions, bacteremia and toxemia resulting in severe dyspnea, hypoxia and septic shock. Widened mediastinum is the classic finding on imaging of the chest, but may initially be subtle (Images at <http://www.bt.cdc.gov/Agent/inhalational.asp> and in the appendices). Case-fatality rates for inhalational anthrax are high, even with appropriate antibiotics, and supportive care. Following the bioterrorist attack in fall 2001, the case-fatality rate among patients with inhalational disease was 45% (5/11). Person-to person spread of inhalational anthrax has not been documented.

For case definitions, treatment guidelines, laboratory testing procedures, etc, see Anthrax Information for Health Care Providers

<http://www.bt.cdc.gov/agent/anthrax/anthrax-hcp-factsheet.asp>

DHEC Contact Information for Reportable Diseases and Reporting Requirements

Reporting of cases or possible cases of anthrax consistent with South Carolina Law requiring the reporting of diseases and conditions to your state or local public health department. (State Law # 44-29-10 and Regulation # 61-20) as per the DHEC 2004 List of Reportable Conditions available at: http://www.scdhec.gov/health/disease/docs/reportable_conditions.pdf

Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities to collect and receive such information for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512).

Regional Public Health Offices

Mail or call reports to the Epidemiology Office in each Public Health Region.

Region 1

(Anderson, Oconee)
220 McGee Road
Anderson, SC 29625
Phone: (864) 231-1966
Fax: (864) 260-5623
Nights / Weekends: 1-866-298-4442

(Abbeville, Edgefield, Greenwood, Laurens, McCormick, Saluda)

1736 S. Main Street
Greenwood, SC 29646
Phone: 1-888-218-5475
Fax: (864) 942-3690
Nights / Weekends: 1-800-420-1915

Region 2

(Greenville, Pickens)
PO Box 2507
200 University Ridge
Greenville, SC 29602-2507
Phone: (864) 282-4139
Fax: (864) 282-4373
Nights / Weekends: (864) 460-5355 or
1-800-993-1186

(Cherokee, Spartanburg, Union)

PO Box 4217
151 E. Wood Street
Spartanburg, SC 29305-4217
Phone: (864) 596-2227 ext. 210
Fax: (864) 596-3443
Nights / Weekends: (864) 809-3825

Region 3

(Chester, Lancaster, York)
PO Box 817
1833 Pageland Highway
Lancaster, SC 29721
Phone: (803) 286-9948
Fax: (803) 286-5418
Nights / Weekends: 1-866-867-3886 or
1-888-739-0748

(Fairfield, Lexington, Newberry, Richland)

2000 Hampton Street
Columbia, SC 29204
Phone: (803) 576-2749
Fax: (803) 576-2993
Nights / Weekends: (803) 304-4252

Region 4

(Clarendon, Kershaw, Lee, Sumter)
PO Box 1628
105 North Magnolia Street
Sumter, SC 29150
Phone: (803) 773-5511
Fax: (803) 773-6366
Nights/Weekends: 1-877-831-4647

(Chesterfield, Darlington, Dillon, Florence, Marlboro, Marion)

145 E. Cheves Street
Florence, SC 29506
Phone: (843) 661-4830
Fax: (843) 661-4859
Nights / Weekends: (843) 660-8145

Region 5

(Bamberg, Calhoun, Orangeburg)
PO Box 1126
1550 Carolina Avenue
Orangeburg, SC 29116
Phone: (803) 533-7199
Fax: (803) 536-9118
Nights / Weekends: (803) 954-8513

Region 5 (cont)

(Aiken, Allendale, Barnwell)
1680 Richland Avenue, W. Suite 40
Aiken, SC 29801
Phone: (803) 642-1618
Fax: (803) 643-8386
Nights / Weekends: (803) 827-8668 or
1-800-614-1519

Region 6

(Georgetown, Horry, Williamsburg)
2830 Oak Street
Conway, SC 29526-4560
Phone: (843) 365-3126
Fax: (843) 365-3153
Nights / Weekends: (843) 381-6710

Region 7

(Berkeley, Charleston, Dorchester)
4050 Bridge View Drive, Suite 600
N. Charleston, SC 29405
Phone: (843) 746-3806
Fax: (843) 746-3851
Nights / Weekends: (843) 219-8470

Region 8

(Beaufort, Colleton, Hampton, Jasper)
219 S. Lemacks Street
Walterboro, SC 29488
Phone: (843) 525-7603
Fax: (843) 549-6845
Nights / Weekends: 1-800-614-4698

Bureau of Disease Control

Acute Disease Epidemiology Division
1751 Calhoun Street
Box 101106
Columbia, SC
Phone: (803) 898-0861
Fax: (803) 898-0897
Nights / Weekends: 1-888-847-0902

Categories of Health Alert messages:

Health Alert conveys the highest level of importance; warrants immediate action or attention.

Health Advisory provides important information for a specific incident or situation; may not require immediate action.

Health Update provides updated information regarding an incident or situation; unlikely to require immediate action.